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SNOW SURVEYS AND IRRIGATION WATER FORECASTS

for the  
COLORADO RIVER DRAINAGE BASIN

May 1, 1941

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Issued by the  
United States Department of Agriculture  
Soil Conservation Service  
Division of Irrigation  
In Cooperation with  
The Colorado Agricultural Experiment Station  
Colorado State College  
Fort Collins, Colorado

May 10, 1941







SNOW SURVEYS AND IRRIGATION WATER FORECASTS  
for  
COLORADO RIVER BASIN  
May, 1941

The following data pertaining to snow surveys and irrigation water-supply forecasts are provided by the Division of Irrigation, Soil Conservation Service, U. S. Department of Agriculture, in cooperation with State departments, other federal bureaus and local organizations. The snow measurements are made principally by field personnel of the following Federal Government organizations: Forest Service, National Park Service, Geological Survey, Bureau of Reclamation, Indian Service; and the Utah Agricultural Experiment Station. This work is otherwise conducted cooperatively with the State Engineers of Utah, Colorado, and Wyoming, U. S. Geological Survey, Utah and Colorado Agricultural Experiment Stations, and various municipalities, irrigation associations, power companies, and others. Precipitation records are supplied by the U. S. Weather Bureau.

SUMMARY OF MAY 1 SNOW SURVEYS AND COMPARISON OF DATA WITH THAT OF PREVIOUS YEARS BY WATERSHEDS

WATERSHEDS	Snow Depth			Water Content			Number Courses in Average	Snow Density			1941 Water Content in percent of	
	Six Year Avg.*		1940	Six Year Avg.*	1940	1941		Six Year Avg.*	1940	1941	Six Year Avg.*	1940
	In.	In.		In.	In.	In.		Percent	Percent	Percent	Percent	
			Percent									Percent
COLORADO RIVER												
Green River	17.9	8.6	25.4	6.8	3.1	8.0	6	38	36	32	118	258
Colorado River**	30.1	24.2	37.3	11.2	7.8	13.5	20	37	32	36	120	173
Yampa River	36.7	34.5	41.5	16.4	16.5	16.2	5	45	48	39	99	98
White River	28.7	25.8	48.3	12.0	10.1	18.6	2	42	39	38	155	184
Gunnison River	36.9	29.2	53.4	14.0	10.3	20.1	12	38	35	38	144	195
Dolores River	15.1	10.9	33.5	5.8	4.0	13.2	3	38	37	39	228	330
San Juan River	34.3	13.8	74.3	15.3	5.7	31.0	4	45	41	42	203	544

\*Some for shorter periods

\*\*Above Grand Junction, Colorado







# PRECIPITATION DATA (Based on incomplete returns)

WATERSHED	STATE	Precipitation October 1 to April 30 <u>Inches</u>	Departure from Normal <u>Inches</u>	Precipitation April <u>Inches</u>	Departure from Normal <u>Inches</u>
Colorado	Colorado	14.01	+3.01	3.04	+1.45
Green	Wyoming	6.82	+1.32	2.40	+1.40
San Juan	New Mexico	11.26	+5.37	2.10	+1.26
Gila	Arizona	17.08	+8.52	3.06	+2.22
Gila	New Mexico	9.94	+4.18	1.70	+1.14

Precipitation on the watershed of the Colorado River and its tributaries in Colorado, Wyoming, New Mexico and Arizona was much above normal during April. The greatest excess for the month occurred on the watershed of the Gila. With one exception it was the wettest April in northern Arizona in the last 46 years. The accumulated precipitation since October 1 is now above normal over all parts of the watershed, and over the San Juan and Gila drainages it is more than twice the normal for the period. Moderate to heavy rains continued during the first week of May over most of the watershed.

## WATER SUPPLY OUTLOOK

COLORADO RIVER AND TRIBUTARIES IN COLORADO. The snow cover in the high mountains of the main Colorado River above Grand Junction has on the average 73 percent greater water content than a year ago and 20 percent greater than the 6-year average. The April-July run-off of this stream at Glenwood Springs is now estimated at 1,500,000 acre-feet which is about 10 percent greater than the past 6-year average for this period. On the Yampa drainage the present water content of the snow equals that of a year ago and is only slightly less than the average over the past six years. For the White the water content of the snow is 84 percent greater than last year at this time and 55 percent more than the 6-year average. Ample water supply for this stream this season is now assured.





## WATER SUPPLY OUTLOOK (Continued)

Conditions on the Gunnison are likewise especially good since the present water content of the snow on this drainage is nearly double that of a year ago and 44 percent more than the past 6-year average. The average increase in the water content of the snow in the high areas of this drainage during April was 2.2 inches. On the Dolores the water content is 13.2 inches as compared with only 4.0 inches a year ago. This present water content is about 130 percent greater than the past 6-year average. A heavy run-off is to be expected from the watershed of the Dolores this season.

**SAN JUAN.** The May 1 snow surveys over this drainage show the water in snow storage to be nearly 450 percent greater than last year and twice the six-year average. The present water content in inches nearly equals the average snow depth for the past six years. The Upper San Juan snow course, one mile west of Wolf Creek Pass, measured 54.3 inches of water May first. During April the accumulation of water in the snow for this drainage was 11.2 inches. Because of the great amount of water now held in snow storage over the headwaters of this stream, run-off at high stage can be expected. On the Animas River watershed the May 1 snow surveys show the water content to be 12.3 inches as an average for two courses; on April 1 this average was 9.6 inches. The April-July run-off at Durango is expected to exceed 400,000 acre-feet.

The run-off this summer from the Colorado River and its tributaries in Colorado will be much in excess over that of previous years.

Storage in Taylor Park Reservoir, Gunnison drainage, May 1, was about one-third capacity and three-fourths of the amount in storage a year ago. Soil moisture conditions in western Colorado are good throughout the agricultural areas.

Storage in the reservoirs in the Salt River Valley in Arizona is an all-time record with many overflowing. The San Carlos Reservoir on the Gila has at this time 676,000 acre-feet in storage, slightly more than half full. The May 1, 1940 storage in San Carlos was 34,000 acre-feet. Soil moisture throughout the agricultural areas in Arizona are very good.



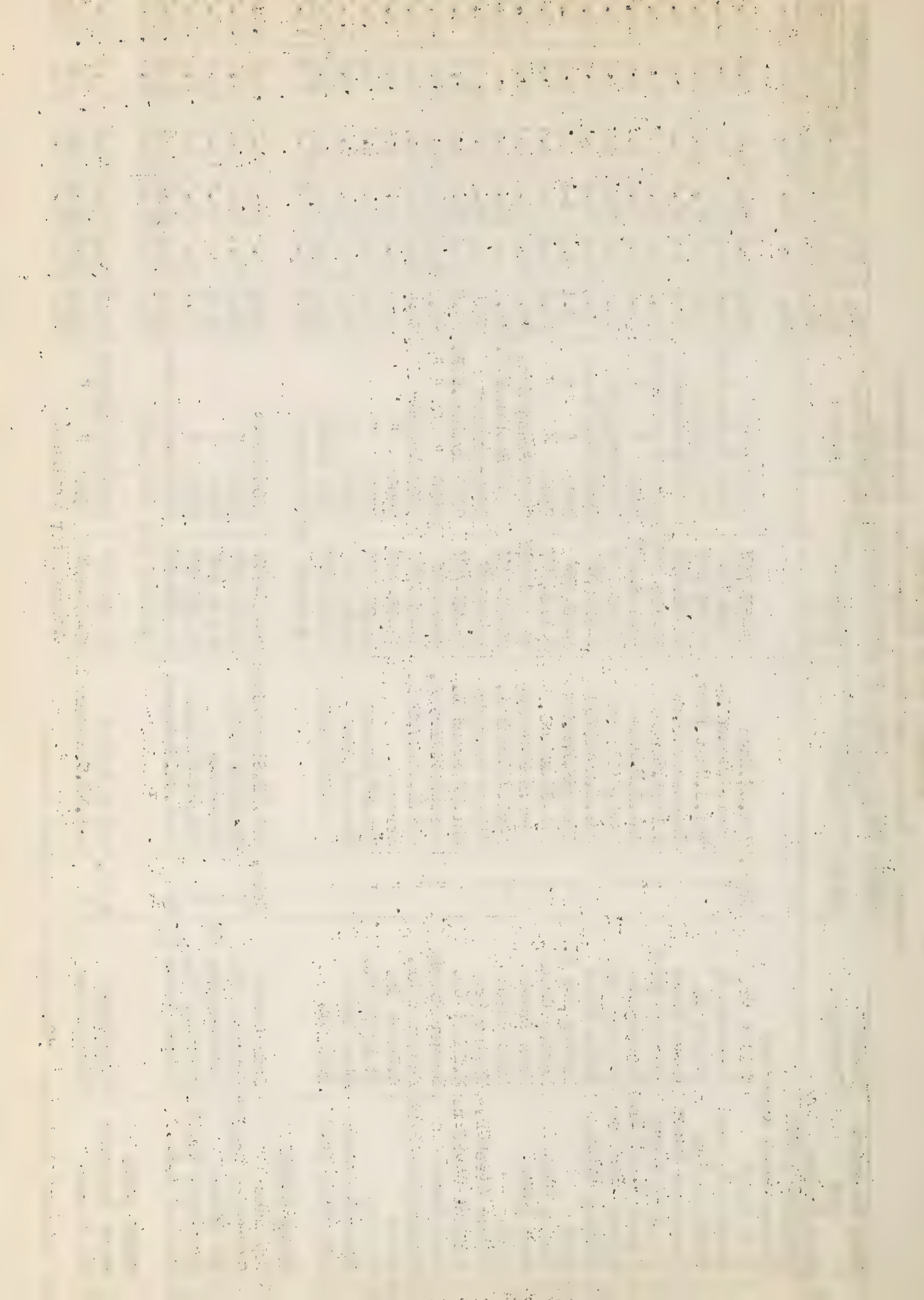


**COLORADO RIVER WATERSHED**  
**Summary of Federal and State Cooperative Snow Surveys**  
**Issued May 10, 1941, at Fort Collins, Colorado**

Main Drainage and Snow Course		Local Drainage	Location		Elev.	National Forest	May 1 Snow Course Measurements					
No.	Snow Course	State	Locality	Description			Av. In.	1940 In.	1941 In.	Av. Water Content 1940 In.		
<b>COLORADO RIVER</b>												
(Above Grand Junction)												
7	Park View*	Willow Cr.	Colo.	7mi. SE. Rand	9200	Routt	19.6	20.4	27.7	8.0	In.	In.
12	Phantom Valley	Colorado R.	"	11mi. N. Grand L.	9300	Ry. Mtn. N.P.	16.4	10.6	27.7	6.2	5.8	13.5
16	Berthoud Pass	Fraser R.	"	4mi. S. West Fort.	9700	Arapaho	41.2	37.4	50.1	15.2	3.5	10.3
19	Tennessee Pass*	Eagle River	"	Tennessee Pass	10200	Cochetopa	15.4	6.7	27.4	5.2	12.4	18.8
33	Ind. Pass Tunnel	Lincoln Gulch	"	W. Port. Tunnel	10200	Holy Cross	39.2	33.7	47.2	14.4	1.3	9.7
34	N. Lost Trail Cr.	Crystal R.	"	3mi. E. Marble	9200	"	23.0	21.7	29.7	9.1	11.9	15.5
37	M. Fork Camp Gr.	Williams Fk.	"	13mi. N. Dillon	9000	Arapaho	11.8	3.4	20.5	4.1	9.1	10.4
44	Fiddler Gulch	Eagle River	"	2mi. E. Mitchell	11000	Holy Cross	39.9	41.4	47.6	13.3	1.3	8.1
45	Nast	Frying Pan R.	"	23mi. SE. Basalt	8700	"	3.1	4.7	3.1	0.9	12.7	15.2
54	Maroon Lake	Maroon Creek	"	8mi. SW. Aspen	9300	"	13.1	2.0	23.8	5.1	0.4	1.1
56	Mesa Lakes	Mesa Creek	"	15mi. E. Palisade	10000	Grand Mesa	42.9	42.8	71.6	16.3	0.6	9.0
59	Lulu	Lulu Creek	"	14mi. N. Grand L.	10200	Ry. Mtn. N.P.	58.2	--	47.4	23.0	16.6	27.5
62	Willow Creek P.	Willow Cr.	"	Willow Cr. Pass	9500	Arapaho	37.4	33.3	41.6	15.2	--	16.6
64	N. Inlet Grand L.	N. Inlet Cr.	"	4mi. NE. Grand L.	9000	Ry. Mtn. N.P.	24.9	17.7	26.7	8.8	10.6	16.9
65	Lake Irene	Beaver Creek	"	1mi. SW. Milner P.	10600	"	66.2	61.8	67.4	24.7	5.7	8.8
66	Thunderbolt Peak	Buchanan Cr.	"	5mi. E. Monarch L.	9500	Arapaho	38.4	28.5	43.3	14.7	20.5	15.5
69	Arrow	S. Ranch Cr.	"	Arrow	9900	"	22.4	15.5	29.8	6.9	1.9	9.8
70	Lapland	St. Louis Cr.	"	7mi. SW. Fraser	9300	"	18.6	0.0	31.2	6.4	0.0	11.4
79	Fremont Pass #2	Blue River	"	Fremont Pass	11400	"	47.7	54.2	52.8	16.6	15.6	17.7
91	Lynx Pass No. 2	Rock Cr.	"	7mi. NE. Toponas	9100	Routt	22.7	23.3	28.9	8.9	8.0	10.3
Average for Drainage							30.1	24.2	37.3	11.2	7.8	13.5
<b>YAMPA RIVER</b>												
6	Dry Lake	Soda Creek	Colo.	4mi. NE. Steam. Spgs	8200	Routt	34.4	37.5	36.7	16.9	19.4	15.6
8	Columbine Lodge*	Harrison Cr.	"	Rbt. Ears Pass	9300	"	44.6	40.9	48.1	19.7	18.2	18.0
9	Elk River	Independence Cr.	"	Columbine	8700	"	31.4	26.3	34.0	12.5	12.5	12.9
91	Lynx Pass No. 2*	Morrison Cr.	"	7mi. NE. Toponas	9100	"	22.7	23.3	28.9	8.9	8.0	10.3
10	Rambler R.S.	Little Snake R.	Wyo.	13mi. SW. Encampmt	8600	Medicine Bow	50.5	44.3	60.0	24.1	24.6	24.0
Average for Drainage							36.7	34.5	41.5	16.4	16.5	16.2
<b>WHITE RIVER</b>												
35	Burro Mountain	N. Elk Creek	Colo.	8mi. S. Buford	9000	White River	35.9	35.0	58.8	14.8	13.2	22.8
36	Rio Blanco	White River	"	4mi. NW. Trappers L	8500	"	21.5	16.6	37.8	9.2	7.0	14.5
Average for Drainage							28.7	25.8	48.3	12.0	10.1	18.6

\*On adjacent drainage. \*Readings on original course.

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## COLORADO RIVER WATERSHED

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Issued May 10, 1941, at Fort Collins, Colorado

Main Drainage and No. Snow Course	Local Drainage	State	Location		Descrip- tion	Elev.	National Forest	May 1 Snow Course Measurements						
			Locality					Avg.	In.	1940	1941	Avg.	In.	1940
GUNNISON RIVER														
18 Crested Butte	Slate River	Colo.	3mi. N. Crested B.		22-13S-86W	9000	Gunnison	11.5	1.3	23.3	4.6	0.4		9.7
42 Marshall Creek	Marshall Cr.	"	Marshall Pass		24-48N-6E	10800	Cochetopa	27.8	18.2	54.4	10.1	6.2		17.8
43 Poncha Creek*	"	"	"		19-48N-7E	10500	"	21.0	13.4	52.8	7.7	4.6		18.6
46 Park Cone	Taylor River	"	Taylor Park Res.		19-14S-82W	9700	Gunnison	11.0	0.5	25.5	3.4	0.1		5.7
53 Alexander Lake	Kiser Creek	"	10mi. N. Cedaredge		2-12S-95W	10000	Grand Mesa	63.4	57.1	88.9	24.8	19.8		33.7
55 Snowshoe Mesa	Snowshoe Cr.	"	16mi. NE. Paonia		14-13S-89W	7500	Gunnison	0.0	0.0	0.0	0.0	0.0		0.0
58 Ironton Park	Red Mtn. Cr.	"	5mi. S. Ouray		29-43N-7W	9800	Uncompahgre	19.5	19.4	39.4	7.9	8.3		16.7
85 Trickle Divide	Surface Cr.	"	13mi. N. Cedaredge		23-11S-94W	10000	Grand Mesa	77.2	63.9	90.4	29.2	23.4		34.9
86 Trickle	"	"	11mi. " "		34-11S-94W	9700	"	68.0	51.9	84.0	26.4	19.0		33.8
87 Park Reservoir	"	"	" "		34-11S-94W	9500	"	70.0	58.2	81.7	27.4	21.3		33.4
89 Porphyry Creek	Porphyry Cr.	"	Monarch Pass		19-49N-6E	10800	Cochetopa	50.2	38.9	61.4	18.3	12.5		24.1
94 Sunshine Mt. No. 2	Henson Cr.	"	10mi. W. Lake City		35-44N-6W	10200	Gunnison	23.3	27.7	39.0	8.6	7.8*		13.0
Average for Drainage								36.9	29.2	53.4	14.0	10.3		20.1
DOLORES RIVER														
23 Rico	Dolores R.	Colo.	2mi. S. Rico		11-38N-11W	8700	Montezuma	3.1	0.0	18.5	1.2	0.0		7.2
24 Telluride	San Miguel R.	"	Telluride		6-42N-8W	8600	"	2.0	0.0	12.1	0.8	0.0		4.5
25 Lizard Head	Dolores R.	"	10mi. N. Rico		24-41N-10W	10300	"	40.1	32.8	70.0	15.3	12.1		27.8
90 Lone Cone	Ground Hog Cr.	"	16mi. N. W. Rico		23-41N-13W	8900	"	--	--	--	--	--		--
Average for Drainage								15.1	10.9	33.5	5.8	4.0		13.2
SAN JUAN RIVER														
26 Wolf Creek Pass*	Wolf Creek	Colo.	Wolf Creek Pass		4-37N-2E	10000	Rio Grande	58.4	23.2	108.2	26.5	9.8		45.2
29 Upper San Juan	"	"	4mi. W. Wolf Cr. P.		10-37N-1E	10000	San Juan	68.0	31.8	130.5	30.3	13.1		54.3
30 Silverton Sub. S.	Animas R.	"	2mi. NE. Silverton		10-41N-7W	9400	"	3.1	0.0	13.2	1.5	0.0		6.1
31 Cascade	Cascade Cr.	"	5mi. N. Electra L.		12-39N-9W	8850	"	7.6	0.0	45.4	3.1	0.0		18.4
93 Granite Peaks	Los Pinos R.	"	11mi. NE. Columbus		24-37N-6W	7950	"	11.7	--	11.7	6.1	--		6.1
18 Chamita*	Navajo R.	N. Mex.	6mi. NW. Chama		36.9N106.7W	8500	Off Forest	34.3	13.8	74.3	15.3	5.7		31.0
Average for Drainage								34.3	13.8	74.3	15.3	5.7		31.0

\*On adjacent drainage. \*Readings on original course











